What is claimed is:

1. An optical device, comprising:

a first row of M optical circuit stages, each of the M optical circuit stages being connected to an adjacent optical circuit stage by N parallel waveguides having substantially no curvature; and

a second row of M optical circuit stages, each of the M optical circuit stages being connected to an adjacent optical circuit stage by N parallel waveguides having substantially no curvature, wherein the first row is coupled to the second row to form a multi-stage planar device, and N and M are integers.

2. The optical device of claim 1, wherein each of the M optical circuit stages includes N-optical circuit units to form an N x N multi-stage planar device.

3. The optical device of claim 2, wherein the optical circuit unit includes a switching device.

4. The optical device of claim 3, wherein the switching device includes a Mach-Zehnder switch.

5. The optical device of claim 3, wherein the switching device includes a Y-digital optical switch.

6. The optical device of claim 2, wherein each optical circuit unit includes a directional coupler.

7. The optical device of claim 2, wherein each optical circuit unit includes a MEMS device.

8. The optical device of claim 2, wherein each optical circuit unit includes a thermo-optical actuator.

9. The optical device of claim 2, wherein each optical circuit unit includes a mechanical actuator.

10. The optical device of claim 2, wherein each optical circuit unit includes an electro-optical actuator.

11. The optical device of claim 2, wherein each optical circuit unit includes an electrostatic actuator.

12. The optical device of claim 2, wherein each optical circuit unit includes a magnetic actuator.

13. The optical device of claim 2, wherein each optical circuit unit includes a electro-optical actuator.

14. The optical device of claim 1, wherein the first row is connected to the second row by optical fibers.

15. The optical device of claim 1, wherein the first row is connected to the second row by a chip-to-chip connection.

16. The optical device of claim 15, wherein the chip-to-chip connection includes a laser weld.

17. The optical device of claim 15, wherein the chip-to-chip connection includes an adhesive.

18. The optical device of claim 15, wherein the chip-to-chip connection is implemented using a mass pigtailing technique.

19. The optical device of claim 15, wherein the chip-to-chip connection includes aligning and mounting the first row and the second row on an alignment substrate.

20. The optical device of claim 15, wherein index-matching material is disposed between the first row and the second row.

21. A method for making an optical device comprising the steps of:

providing a planar device having a plurality of rows, each of the plurality of rows having M optical circuit stages, each of the M optical circuit stages being connected to an adjacent optical circuit stage by N parallel waveguides having substantially no curvature, wherein N and M are integers;

separating the planar device into a plurality of discrete components, wherein each discrete component includes a row of the plurality of rows; and

coupling the plurality of discrete components to form a multi-stage planar device.

22. The method of claim 21, wherein the step of providing includes providing each component with N input waveguides and N output waveguides.

23. The method of claim 22, wherein the step of coupling includes connecting the N output waveguides of a discrete component to the N input waveguides of an adjacent discrete component with optical fiber.

24. The method of claim 22, wherein the step of coupling includes connecting the N output waveguides of a discrete component to the N input waveguides of an adjacent discrete component using a chip-to-chip connection.

25. The method of claim 22, wherein the steps of coupling includes connecting the N output waveguides of a discrete components to the N input waveguides of an adjacent discrete component by laser welding.

26. The method of claim 22, wherein the steps of coupling includes connecting the N output waveguides of a discrete component to the N input waveguides of an adjacent discrete component using an adhesive.

27. The method of claim 22, wherein the step of coupling includes disposing index-matching material between adjacent discrete components.

28. The method of claim 21, wherein the planar device is an N x N switch fabric.

29. A method of fabricating an optical circuit fabric comprising the steps of:

providing a substrate; and

disposing a matrix of optical circuit stages on the substrate, each of the optical circuit stages being connected to an adjacent optical circuit stage by N parallel waveguides extending in a first direction to form at least one row of M optical circuit stages, wherein the parallel waveguides have substantially no curvature, and N and M are integers.

30. The method of claim 29, further comprising the steps of:

separating the at least one row of M optical circuit stages into a plurality of optical circuit components; and

coupling the plurality of optical circuit components to form a multi-stage planar device.

31. The method of claim 29, wherein the substrate is comprised of silicon.

32. The method of claim 29, wherein the substrate is comprised of silica.

33. The method of claim 29, wherein the waveguides are comprised of a silica material.

34. The method of claim 29, wherein the waveguides are comprised of a polymer material.

35. The method of claim 29, wherein the waveguides are comprised of a semiconductor material.

36. The method of claim 29, wherein the substrate has an approximate surface area of 100mm x 100mm.